

CLAIMS

WHAT IS CLAIMED IS:

1. A method for tracking a telemetry device over a wireless network, the method comprising:
determining that the telemetry device is operating in a first mode requiring assisted Global Positioning System (A-GPS) data from the wireless network to determine location of the telemetry device; and
transmitting the A-GPS data to the telemetry device if the telemetry device is operating in the first mode,
wherein the telemetry device operates in a second mode to obtain GPS data autonomously for determining the location when the telemetry device is outside of the coverage area of the wireless network.
2. A method according to claim 1, wherein the wireless network is a two-way paging system, the method further comprising:
transmitting a request message to the telemetry device requesting retrieval of data collected by the telemetry device according to a wireless protocol compatible with the paging system; and
receiving a response message containing the data from the telemetry device in response to the request message.
3. A method according to claim 2, the method further comprising:
modifying a destination address field of the response message; and
routing the response message according to the modified destination address.

4. A method according to claim 2, wherein the request message specifies a response window indicating a time range for the telemetry device to respond to the request, the response window specifying an offset value assigned to the telemetry device for transmitting the response message.

5. A method according to claim 1, the method further comprising:
communicating with one of a client or an enterprise server over a data network to supply
location of the telemetry device in support of fleet or asset management.

6. A method according to claim 5, the method further comprising:
maintaining user account information associated with the client or the enterprise; and
storing configuration information of the telemetry device.

7. A method according to claim 5, the method further comprising:
generating a report for presentation to the client, the report relating to tracking of the
telemetry device.

8. A method according to claim 5, the method further comprising:
translating messages from the telemetry device according to a communication protocol that is
different from the wireless protocol and that is compatible with the client.

9. A method according to claim 1, wherein the telemetry device is affixed to an object
including one of an asset and a vehicle, the method further comprising:
retrieving data about the object over the wireless network.

10. A method according to claim 1, wherein coverage of the wireless network is partitioned
into a plurality of zones, one of the zones covering the telemetry device, the method further
comprising:
collecting ephemeris data from a GPS reference network; and

generating the A-GPS data based on the collected ephemeris data for the one zone.

11. A system for tracking a telemetry device over a wireless network, the system comprising:
an assisted Global Positioning System (A-GPS) server configured to determine that the
telemetry device is operating in a first mode requiring A-GPS data from the wireless
network to determine location of the telemetry device; and
a messaging server configured to transmit the A-GPS data to the telemetry device if the
telemetry device is operating in the first mode,
wherein the telemetry device operates in a second mode to obtain GPS data autonomously for
determining the location when the telemetry device is outside of the coverage area of the
wireless network.
12. A system according to claim 11, wherein the wireless network is a two-way paging
system, the system further comprising:
a presentation server containing business logic to generate a request message to the telemetry
device requesting retrieval of data collected by the telemetry device according to a
wireless protocol compatible with the paging system.
13. A system according to claim 12, wherein the messaging server receives a response
message containing the data from the telemetry device in response to the request message, the
system further comprising:
a routing server configured to modify a destination address field of the response message, and
to route the response message according to the modified destination address.
14. A system according to claim 13, wherein the request message specifies a response
window indicating a time range for the telemetry device to respond to the request, the response
window specifying an offset value assigned to the telemetry device for transmitting the response
message.

15. A system according to claim 12, wherein the presentation server communicates with one of a client over a data network to supply location of the telemetry device in support of fleet or asset management.

16. A system according to claim 15, wherein the presentation server maintains user account information associated with the client or the enterprise, and stores configuration information of the telemetry device.

17. A system according to claim 15, wherein the presentation server generates a report for presentation to the client, the report relating to tracking of the telemetry device.

18. A system according to claim 15, further comprising:

a gateway configured to translate messages from the telemetry device according to a communication protocol that is different from the wireless protocol and that is compatible with the client.

19. A system according to claim 12, wherein the telemetry device is affixed to an object including one of an asset and a vehicle, the presentation server retrieving data about the object over the wireless network.

20. A system according to claim 11, wherein coverage of the wireless network is partitioned into a plurality of zones, one of the zones covering the telemetry device, the A-GPS server collecting ephemeris data from a GPS reference network and generating the A-GPS data based on the collected ephemeris data for the one zone.

21. A computer-readable medium carrying one or more sequences of one or more instructions for tracking a telemetry device over a wireless network, the one or more sequences

of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

determining that the telemetry device is operating in a first mode requiring assisted Global Positioning System (A-GPS) data from the wireless network to determine location of the telemetry device; and
transmitting the A-GPS data to the telemetry device if the telemetry device is operating in the first mode,
wherein the telemetry device operates in a second mode to obtain GPS data autonomously for determining the location when the telemetry device is outside of the coverage area of the wireless network.

22. A computer-readable medium according to claim 21, wherein the wireless network is a two-way paging system, the computer-readable medium further including instructions for causing the one or more processors to perform the steps of:

transmitting a request message to the telemetry device requesting retrieval of data collected by the telemetry device according to a wireless protocol compatible with the paging system; and
receiving a response message containing the data from the telemetry device in response to the request message.

23. A computer-readable medium according to claim 22, further including instructions for causing the one or more processors to perform the steps of:

modifying a destination address field of the response message; and
routing the response message according to the modified destination address.

24. A computer-readable medium according to claim 22, wherein the request message specifies a response window indicating a time range for the telemetry device to respond to the

request, the response window specifying an offset value assigned to the telemetry device for transmitting the response message.

25. A computer-readable medium according to claim 21, further including instructions for causing the one or more processors to perform the step of:

communicating with one of a client or an enterprise server over a data network to supply location of the telemetry device in support of fleet or asset management.

26. A computer-readable medium according to claim 25, further including instructions for causing the one or more processors to perform the steps of:

maintaining user account information associated with the client or the enterprise; and
storing configuration information of the telemetry device.

27. A computer-readable medium according to claim 25, further including instructions for causing the one or more processors to perform the step of:

generating a report for presentation to the client, the report relating to tracking of the telemetry device.

28. A computer-readable medium according to claim 25, further including instructions for causing the one or more processors to perform the step of:

translating messages from the telemetry device according to a communication protocol that is different from the wireless protocol and that is compatible with the client.

29. A computer-readable medium according to claim 21, wherein the telemetry device is affixed to an object including one of an asset and a vehicle, the computer-readable medium further including instructions for causing the one or more processors to perform the step of:
retrieving data about the object over the wireless network.

30. A computer-readable medium according to claim 21, wherein coverage of the wireless network is partitioned into a plurality of zones, one of the zones covering the telemetry device, the computer-readable medium further including instructions for causing the one or more processors to perform the steps of:

- collecting ephemeris data from a GPS reference network; and
- generating the A-GPS data based on the collected ephemeris data for the one zone.

31. A method for supporting tracking and management of an asset over a wireless network, the method comprising:

- determining location information relating to location of the asset when in a first mode of operation; and
- switching to a second mode of operation when the asset is outside a coverage area of the wireless network to obtain assistance data for determining the location.

32. A method according to claim 31, wherein the wireless network is a two-way paging system including a Global Positioning System (GPS) reference network, and the assistance data is assisted Global Positioning System (A-GPS) data derived from the GPS reference network, the method further comprising:

- receiving the A-GPS data from a network operations center (NOC) that manages the wireless network.

33. A method according to claim 31, wherein the location information is determined independently from the NOC.

34. An apparatus for supporting tracking and management of an asset over a wireless network, the apparatus comprising:

- means for determining location information relating to location of the asset when in a first mode of operation; and

means for switching to a second mode of operation when the asset is outside a coverage area of the wireless network to obtain assistance data for determining the location.

35. An apparatus according to claim 34, wherein the wireless network is a two-way paging system including a Global Positioning System (GPS) reference network, and the assistance data is assisted Global Positioning System (A-GPS) data derived from the GPS reference network, the apparatus further comprising:

means for receiving the A-GPS data from a network operations center (NOC) that manages the wireless network.

36. An apparatus according to claim 34, wherein the location information is determined independently from the NOC.